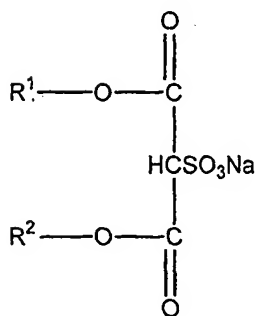


Claimed is:

1. A process for manufacturing a fine pore media comprising the steps of:  
 forming a slurry comprising solvent, alumina and at least 0.01 wt % surfactant  
 wherein said slurry has sufficiently low shear stress at high shear rates less than  
 12,000 dynes/cm<sup>2</sup> at a shear rate of 500/sec. such that it can enter organic foam  
 with pore size equal to or less than 60 ppi;  
 impregnating an organic foam with said slurry to form an impregnated foam;  
 drying said impregnated foam to form a dry impregnated foam;  
 impregnating an organic foam with said slurry to form an impregnated foam;  
 drying said impregnated foam to form a dry impregnated foam;  
 heating said dry impregnated foam to remove said organic foam thereby forming  
 a green ceramic; and  
 heating said green ceramic to a temperature sufficient to sinter said green  
 ceramic.
2. The process for manufacturing a fine pore media of claim 1 wherein said  
 surfactant comprises Formula I:



Formula I

- wherein R<sup>1</sup> and R<sup>2</sup> independently represent an alkyl of 1-8 carbons with the  
 proviso that the number of carbons in R<sup>1</sup> and R<sup>2</sup> combined does not exceed 15.
3. The process for manufacturing a fine pore media of claim 2 wherein the  
 number of carbons in R<sup>1</sup> and R<sup>2</sup> combined does not exceed 14.
  4. The process for manufacturing a fine pore media of claim 3 wherein the number  
 of carbons in R<sup>1</sup> and R<sup>2</sup> combined does not exceed 13.
  5. The process for manufacturing a fine pore media of claim 1 wherein said slurry  
 comprises no more than 1 wt% surfactant.
  6. The process for manufacturing a fine pore media of claim 1 wherein said slurry

- has a shear stress of less than 8000 dynes/cm<sup>2</sup> at a shear rate of 500/sec.
7. The process for manufacturing a fine pore media of claim 1 wherein said filter has a density of no more than 10% of the theoretical density for a ceramic material of the same size.
- 5 8. The process for manufacturing a fine pore media of claim 1 wherein said filter has a density of less than 10% of the theoretical density for a ceramic material of the same size and a compressive yield stress of at least 20 psi
9. The process for manufacturing a fine pore media of any of claims 1-8 wherein said alumina is selected from sintered alumina and phosphate bonded alumina.
- 10 10. A fine pore filter prepared by the method of any of claims 1-9.
11. The process of any of claims 1-9 wherein said foam is quenched foam.
12. A filter for filtering impurities from molten metal wherein said filter comprises ceramic and said filter has a density of less than 10% of the theoretical density for a ceramic material of the same size and a compressive yield stress of at least
- 15 20 psi.
13. The filter of any of claims 10 or 12 wherein said filter has a density of no more than 8% of the theoretical density for a ceramic material of the same size.
14. The filter of claim 13 wherein said filter has a density of no more than 6% of the theoretical density for a ceramic material of the same size.
- 20 15. The filter of any of claims 10 or 12 wherein said filter has a compressive yield stress of at least 40 psi.
16. The filter of claim 15 wherein said filter has a compressive yield stress of at least 60 psi.
17. The filter of claim 16 wherein said filter has a compressive yield stress of at least
- 25 80 psi.
18. A filter of any of claims 12-17 wherein said filter has a density of at least 12% of the theoretical density for a ceramic material of the same size and a compressive yield stress of at least 90 psi.
19. A molten metal filtered by said filter of any of claims 10 or 12-18.
- 30 20. Aluminum filtered by said filter of claim 19.
21. A filter of any of claims 10 or 12-17 comprising a pressure drop of less than 3 in./water at an air flow velocity of 285 ft/min. in a 4 inch diameter circular area.

22. A sintered alumina filter of any of claims 10, 12-18 or 21 having dimensions of at least about 38.1 x 38.1 x 2.54 cm to no larger than about 76.2 x 76.2 x 7.62 cm.